



Remote Sensing Applications Division (RSAD)

CDR Program Office

Weekly Report for Sep 21, 2012
Jeff Privette, Acting Chief



CDR Program Office

FY12 Climate Data Records

Weekly Report – Sep 21, 2012

① Mean Layer Temperatures – Univ of Alabama Huntsville (UAH)

- Completed – Nov 17

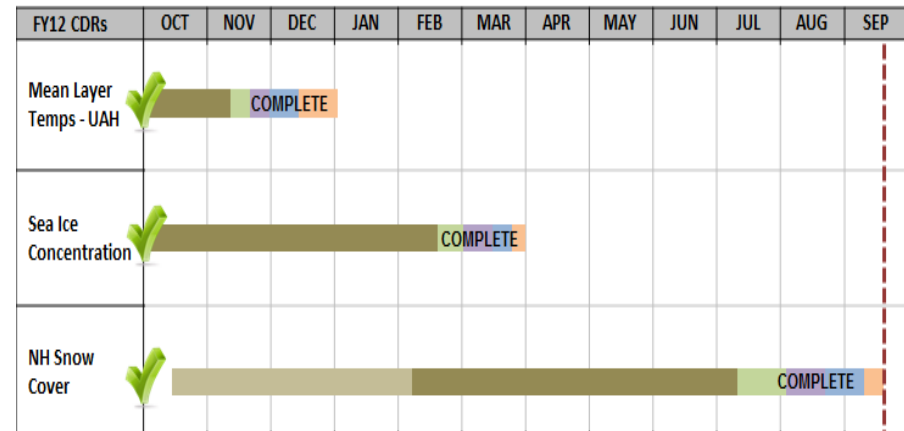
② Sea Ice Concentration

- Completed – Mar 28

③ Northern Hemisphere Snow Cover

- Completed – Sep 19.

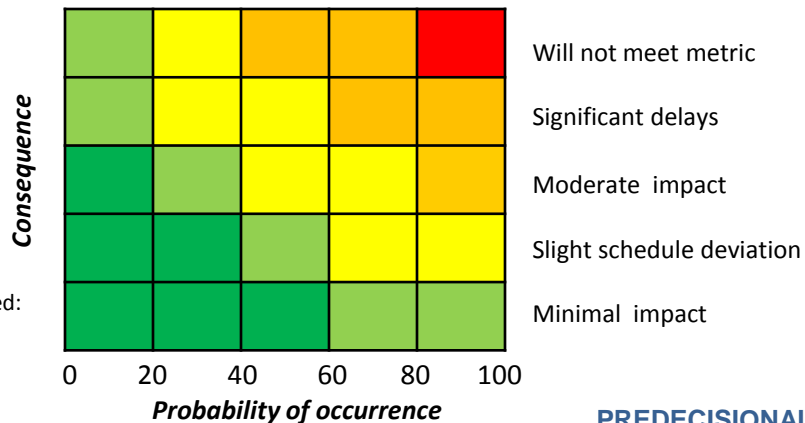
R2O Schedule



R2O PHASE: ASSESSMENT SUBMISSION PREP TRANSFER VERIFY ARCHIVE ACCESS

● No change ↑ Increasing Risk ↓ Decreasing Risk *Candidate CDRs

Risk Matrix



Risk - Mitigation

- NONE**
- NH Snow Cover Extent – completed ORR 9/19

PREDECISIONAL DRAFT INFORMATION

FY12 TCDR - NH Snow Cover

CDR Product: TCDR – NH Snow Cover, 1966-2012 (10 GB)

GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Energy

Project Status

- C-ATBD, MM, and Flow diagram archived and on web
- Data archived and put on THREDDS
- PI found incorrect look up table upon final inspection
 - Updated source code package, rearchived, and reposted
- ORR approved (Sept 19) – dependent upon source code update
 - SME will also add a paragraph to C-ATBD about NMC history

NCDC SOW developed for:

- 1) Monthly updates for one year
- 2) QC tools and training

Next Action/Milestone

- Archive all parts of the CDR (9/12) - **done**
- Put on web and test access (9/14) - **done**
- Conduct ORR (9/19) - **done**



Project Risks

- Funding (SDS 2008)
 - **SS contract signed and returned to NCAD**

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/9/2012												
2	Transfer Prep	100	2/6/2012	8/28/2012												
2a	Comment Source Code	100	2/6/2012	5/22/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	100	3/19/2012	6/11/2012												
2c	Create NetCDF Dataset	100	5/30/2012	8/28/2012												
3	Transfer Code, Docs, and Data	100	4/18/2012	8/31/2012												
4	Verify Code, Docs, and Data	100	4/19/2012	9/7/2012												
5	Archive Code, Docs, and Data	100	5/31/2012	9/14/2012												
6	Provide Access to Code, Docs, and Data	100	6/1/2012	9/21/2012												

PREDECISIONAL DRAFT INFORMATION

Backup FY12 CDR - Mean Layer Temperature - RSS

CDR Product: TCDR – Atmospheric Temperature at Four Layers, 1978-2011 (140 MB)

GEOSS Societal Benefit: Energy, Climate, Ecosystems

Project Status

- PI sent final draft of C-ATBD, review looks good
- PI sent all 5 flow charts of process
 - 3 of 5 sets of accompanying code is complete
- SA available on Google docs for final review
- **About 60% of the code has been documented**
 - **PI says there is more code than he remembered**

NCDC SOW developed for:

- 1) Monthly updates for one year
- 2) QC tools and training

Next Action/Milestone

- PI send updated draft C-ATBD (8/20) - done
- Send next set of documented code and flow chart (8/24) – 3 of 5
- Archive all parts (9/28)



Project Risks

- Funding (SDS 2008)
 - Proposal submitted thru CICS back in May; funding will be available to PI by Sept 15.

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Initial Assessment	100	10/17/2011	2/3/2012												
2	Transfer Prep	65	2/6/2012	9/14/2012												
2a	Comment Source Code	30	2/6/2012	9/14/2012												
2b	Create Docs (CATBD, Flow Chart, MM, Readme)	40	3/19/2012	9/7/2012												
2c	Create NetCDF Dataset	90	5/3/2012	8/31/2012												
3	Transfer Code, Docs, and Data	25	4/18/2012	9/14/2012												
4	Verify Code, Docs, and Data	25	4/19/2012	9/17/2012												
5	Archive Code, Docs, and Data	0	5/31/2012	9/21/2012												
6	Provide Access to Code, Docs, and Data	0	6/1/2012	9/28/2012												

PREDECISIONAL DRAFT INFORMATION

CDR Program Office

NPP/JPSS Climate Raw Data Records (C-RDRs) Project

Weekly Report – September 20, 2012

① VIIRS

- Integrating with the system infrastructure.

② CrIS

- Postponed.

③ ATMS

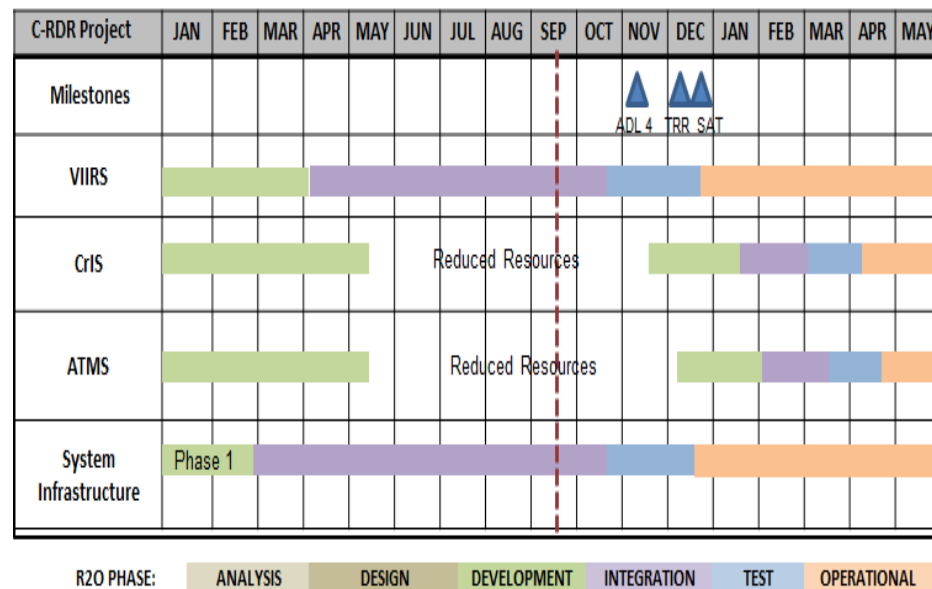
- Postponed.

④ System Infrastructure

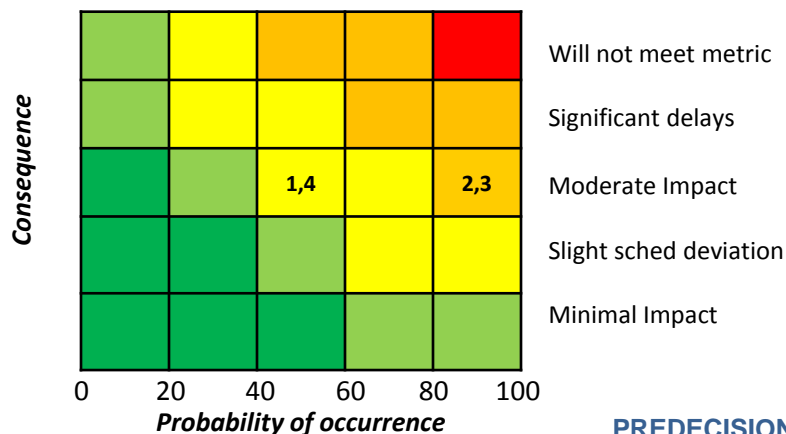
- Integrating with the VIIRS C-RDR.

• Ingest data from CLASS and consistently producing C-RDRs. Need to verify the C-RDRs for correctness.

- Validated post-launch auxiliary files in C-RDR format.
- Successfully created VIIRS C-RDR.



Risk Matrix



Risk and Mitigation

VIIRS, CrIS, ATMS –

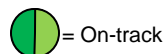
- Resources are being reduced. Delivery of CrIS and ATMS will be delayed.
- Operational software is under maintenance, updated versions may affect C-RDR ported version.

System Infrastructure –

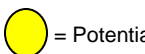
- Reliability of NPP RDRs from CLASS. Need to test ingest of RDRs from CLASS and develop an automated mechanism for re-requesting data.
- Ability of CLASS to handle the frequency and volume of NPP data. CLASS has been successful during system tests.
- Archive in CLASS is currently cost prohibitive. Need to identify alternate archive. Plan to store C-RDRs on HPSS until migration to CLASS.

PREDECISIONAL DRAFT INFORMATION

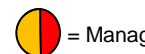
9/24/2012



= On-track



= Potential management action required



= Management attention required

Visible Infrared Imaging Radiometer Suite (VIIRS)

C-RDR Product: Raw sensor measurements with usage and provenance metadata in easily accessible netCDF4 format

GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- **Temporarily working on snow cover CDR for IOC.**
- **Continued work on code for validation of C-RDRs against SDRs.**
- Completed Draft VIIRS C-RDR Product Specification.
- Completed writing the spacecraft diary portion of the VIIRS C-RDR unpacker (for testing/verification).
- Generated an image from a VIIRS C-RDR.
- Successfully ran VIIRS data from CLASS through C-RDR packer.
- Completed dynamic C-RDR file-level metadata code.
- Implemented and verified netCDF compression.
- Verifying (IDPS) documentation and code changes with DEWG.
- Completed writing science and spacecraft diary data.
- Completed test of code that writes VIIRS Support Data.

Next Action / Milestone

- Integrating the VIIRS C-RDR software and the system infrastructure.



Project Risks

- Complexity of the NPP/JPSS RDRs and operational software
- Operational software is under maintenance, updated versions may affect C-RDR ported version

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	10/23/2009	5/4/2010												
2	Design	Completed	5/6/2010	1/5/2011												
3	Development	95.00%	1/6/2011	1/30/2012												
3a	Develop VIIRS processing component	95.00%	1/6/2011	1/12/2012												
3b	Test VIIRS processing component	95.00%	12/28/2011	1/30/2012												
4	Integration	10.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

Being Reworked

PREDECISIONAL DRAFT INFORMATION

C-RDR System Infrastructure

C-RDR Product: Infrastructure to automate the production of the C-RDRs.

GEOSS Societal Benefit: Climate, Water, Ecosystems, Agriculture, Biodiversity, Energy

Project Status

- Consistently processing C-RDRs using ingest data. Need to verify C-RDRs.
- Staging data from CLASS subscription through ingest for C-RDR processing.
- Continued work on algorithm for staging VIIRS RDRs for processing.
- Completed validation of post-launch auxiliary files in C-RDR format.
- Using ADL 4.0 code to create required metadata for auxiliary files.
- Investigating missing metadata for auxiliary data from CLASS.
- Modified supporting data software for auxiliary data changes.
- Created initial VIIRS C-RDR from CLASS mission data.
- Development environment is set up on the CICS network.
- Working on managing queues and processing jobs.
- Locating, validating, and statusing files for processing.
- Developing code for ingest detection and processing.

Next Action / Milestone

- Integrating and testing the system infrastructure.



Project Risks

- Need to develop an automated re-request mechanism for CLASS.

Project Schedule

ID	Task Name	Status	Start	Stop	FY12 Q1			FY12 Q2			FY12 Q3			FY12 Q4		
					Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	Analysis	Completed	9/29/2010	4/22/2011												
2	Design	90.00%	4/25/2011	7/8/2011												
3	Development	80.00%	5/31/2011	2/28/2012												
3a	Develop infrastructure	90.00%	5/31/2011	2/14/2012												
3b	Test infrastructure	70.00%	9/27/2011	2/28/2012												
4	Integration (Phase 2)	5.00%	1/31/2012	3/26/2012												
5	Test		3/23/2012	4/12/2012												
5a	Dry Runs		3/23/2012	4/11/2012												
5b	System Acceptance Test		4/12/2012	4/12/2012												
6	Operational		4/13/2012													

Being Reworked

PREDECISIONAL DRAFT INFORMATION

9/24/2012

POC: Copley

CDR Program Office

OISST Research to Operations Project

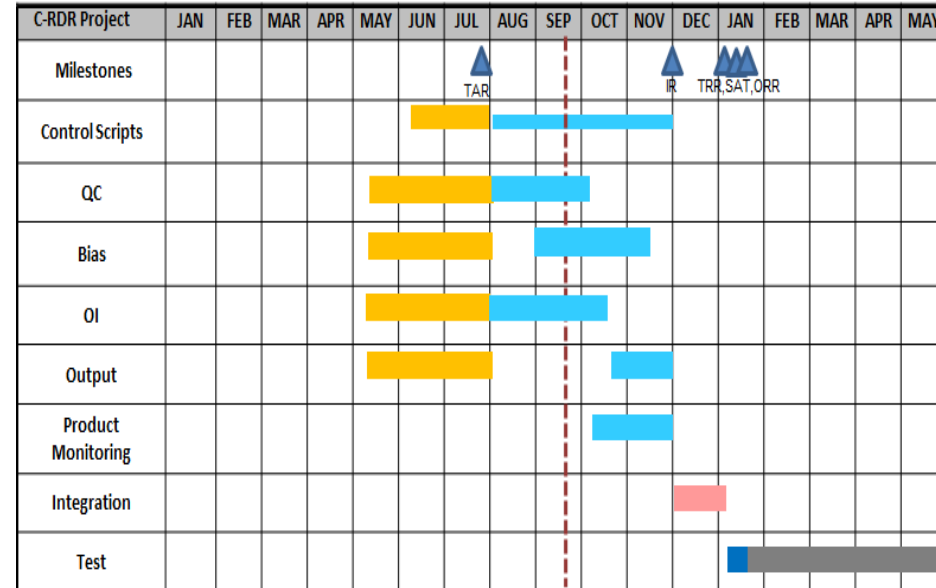
Weekly Report – September 20, 2012

1 OISST – Optimum Interpolated Sea Surface Temperature

- Conducted code review, refactor and unit test of ship_bias.f90.
- Refactoring code (Bias, QC, OI).
- Evaluating validity/duplicates in compile options & static analysis.
- Defined list of tasks for refactoring of each component.
- Developing tests (module & component) to verify code execution.
- Completed testing of static analysis and complexity tools.
- Conducted Technology Review July 25.
- Identifying tasks and developing plan for re-writing/refactoring.
- Initial technical assessment completed.
- Established a common baseline and environment for code.

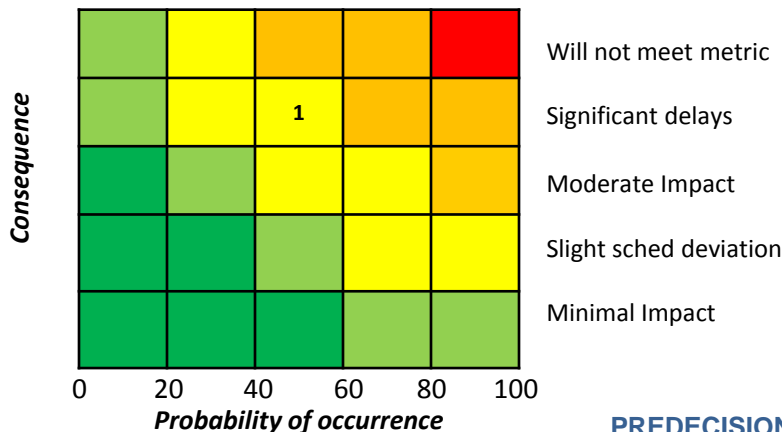
Operations:

- Updated and tested scripts to handle new sea ice data format.

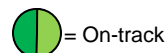


R2O PHASE: ANALYSIS DESIGN DEVELOPMENT INTEGRATION TEST OPERATIONAL

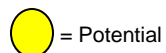
Risk Matrix



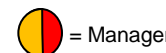
PREDECISIONAL DRAFT INFORMATION



= On-track



= Potential management action required



= Management attention required

Risk and Mitigation

Resource availability for performing the transition.

Configuration Management (CM) process not defined for operations.

No Quality Assurance team available.

Modifying existing software for internal software changes. Product output must remain unchanged for users.

Common infrastructure for operations is not fully defined.

OISST processing will be on a 64 bit architecture.



CDR Program Office

IOC to FOC using PATMOS-X as prototype

Weekly Report – September 21, 2012

Team is developing a comprehensive report that will document FY 12 work performed, results obtained, conclusions, and recommendations.

5&6. Familiarization Runs and Diagnostics (was July 7)

- Running on CICS with new test day suggested by PI. Risk 8

7&8. Develop & Run Algorithm Test (was August 11)

- Reducing compiler optimization gives different numerical results, significance not evaluated yet. Risk 8

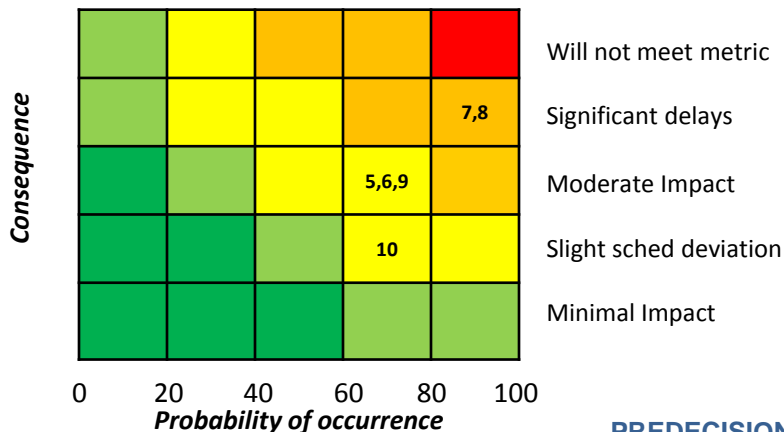
9. Derive / Document Architecture (was September 15)

- Working on control flow documentation.

10. Identify Problems and Opportunities (was September 15)

- 68 problem/opportunity reports in Bugzilla to date
- Main program length (1200 executable lines) and cyclomatic complexity (195) makes it untestable and very difficult to maintain. Recommend breakup into several smaller routines.
- Completed trace from HDF output variable names to names within code. 96 variables in all, some turned off by hard-coded flags.
- Developing concepts for abstraction of data structures within code to reduce cyclomatic complexity in many routines.

Risk Matrix



		Fe		Mar		Apr		May		Jun		Jul		Aug		Sep	
FY 12 3.1 & 3.2		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Develop White Paper																
3	Establish Dev Environment																
4	Build and Test Infrastructure																
5,6	Familiarization & Diagnostics																
7,8	Develop & Run Algorithm Test																
9	Derive / Document Architecture																
10	Identify Probs & Opportunities																
11	Prioritize Probs & Opportunities																

Top Risks and Mitigation

R3. Ongoing parallel development by PI

- Mitigation: Use good differencing tools. Incorporate only those changes that have a good justification from the CDR perspective.

R8. Personnel on task at maximum work load

- With recent budget cuts to the CDRP the personnel still engaged on this task are at maximum work level. More budget challenges could result in the loss of the remaining key personnel and jeopardize the completion of this task.

R10. No sustainable commitment for independent Quality Assurance

- QA will be performed by team. Risk is that this work will not be performed as well as it would be by an experienced, independent QA expert.

R13. PI Availability

- Travel to Wisconsin early FY13 for face to face meeting.



CDR Program Office

Integrated Marine Protected Area Climate Tools (IMPACT)

Weekly Report – Sept 13, 2012

Data Selection & Subsetting for Gulf of Farallones (Mike U.)

- GridSat 1B ✓ , Pathfinder SST ✓ , Sea Surface Height ✓ , SeaWiFS Ocean Color, MODIS Ocean Color, ISSCP Clouds, NARR subset (<28 variables)

Marine Protected Area (MPA) User Interface (John S. & Steve A.)

- Tailored menus ✓ & analysis tools
- Visualization capabilities (Animation ✓ ,split windows)

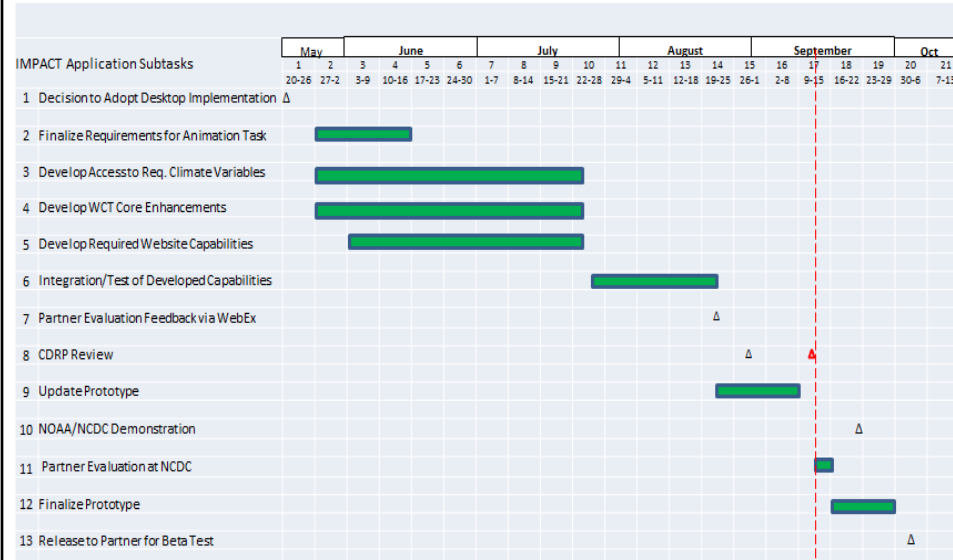
End User Interaction (Benet D. & Karsten S.)

- WebEx demo with customer conducted 8/23/12 ✓
- Well constructed feedback from Kelley Higgason at GFNMS

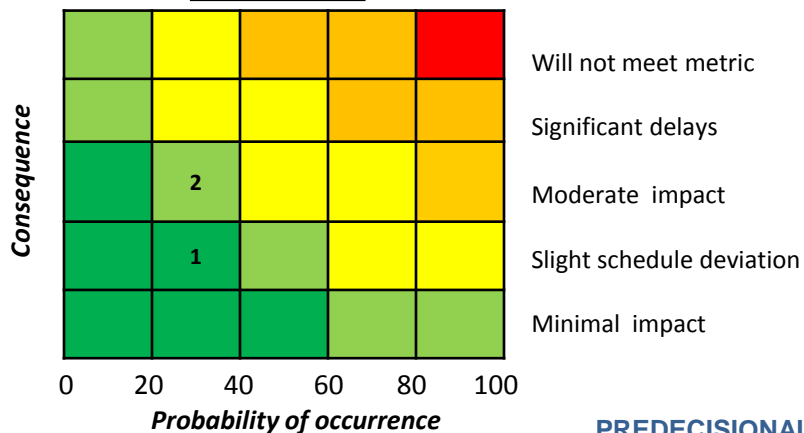
Prototype Delivery Demonstrations

- 8/28 demo to CDRP delayed due to outages – **Today 9/13/12**
- **Demo to DO scheduled for 9/21/12**

Prototyping Schedule



Risk Matrix



Risk and Mitigation

- ① Limited resources have other obligations
 - Schedule is on track, resources committed
 - As planned for, losing Steve A. to other efforts – He's been great!
 - Resources moving on to other projects – Shaida, Steve, Mike**
 - Need to plan for transition of ownership & future development
- ② GFNMS has no funds to travel to NCDC for hands-on evaluation in September

● No change ↑ Increasing Risk ↓ Decreasing Risk

PREDECISIONAL DRAFT INFORMATION